



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

09/471,497

12/23/1999

ISAO MIHARA

0039-7495-2S

7481

22850

7590

04/04/2003

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
FOURTH FLOOR
1755 JEFFERSON DAVIS HIGHWAY
ARLINGTON, VA 22202

EXAMINER

BHATNAGAR, ANAND P

ART UNIT

PAPER NUMBER

2623

DATE MAILED: 04/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/471,497

Applicant(s)

MIHARA ET AL.

Examiner

Anand Bhatnagar

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,9 and 27 is/are pending in the application.
- 4a) Of the above claim(s) 2-8,10-26, and 28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,9, and 27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 2623

DETAILED ACTION

Election/Restrictions

1. Applicant has elected species 1 (fig. 1, claims 1,4,7,9,16,23, and 27) (paper # 6 filed on 01/13/03) with traverse.

Upon examination, some of applicants elected claims do not read on elected species 1 of fig. 1. Claims 1,9, and 27 are generic. Elected claim 4 does not read on elected species 1 (fig. 1) but reads on species 4-6. Elected claims 7 and 23 do not read on elected species 1 but read on species 7 and 8. Elected claim 16 does not read on species 1 but reads on species 5. Therefore, claims 4,7,16 and 23 are withdrawn from further consideration. Since applicant has elected species 1 (claims 1,9, and 27) examiner will address those claims that read on species 1.

Claims 2,3,5,6,8,10-15,17-22,24-26, and 28 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 6 filed on 01/13/03.

In response to applicant's traversal, applicant's representative argues three main points about why the examiners restriction is not proper: The first is that the examiner claims that the invention has distinct species and examiner gives no basis for this distinctness and refers to a form paragraph MPEP 816 for this argument (paper # 6 bottom half of pg. 1), the second point is that the examiner has not provided proof to the established distinctness and refers to

Art Unit: 2623

form paragraph MPEP 806.04(f) (paper #6 top of pg. 2). Lastly, applicant's representative argues that the examiner failed to address whether the claims recite mutually exclusive characteristics and refers to the form paragraph MPEP 803 (paper #6, a third of a page down on page 2). Examiner's rebuttal of these three points is discussed below.

Examiner has performed a specific type of restriction (Species type restriction) on this patent application (09/471,497) and the basis of the species restriction is as follows: Species 1 corresponds to fig. 1, species 2 corresponds to fig. 31, species 3 corresponds to fig. 32, species 4 corresponds to fig. 33, species 5 corresponds to fig. 34, species 6 corresponds to fig. 35, species 7 corresponds to fig. 36, and species 8 corresponds to fig. 37. Applicant's first and third points of the traversal argument, with the specific form paragraphs MPEP 816 and MPEP 803 respectively, apply to a combination-subcombination type of restriction and not to the species restriction that the examiner applied to this application. Therefore, the first and third points of the argument are moot.

As to the second point of the traversal, with the form paragraph MPEP 806.04(f), the examiner will explain why he thinks this is a proper restriction. Examiner has determined species 1 as fig. 1, species 2 as fig. 31, species 3 as fig. 32, species 4 as fig. 33, species 5 as fig. 34, species 6 as fig. 35, species 7 as fig. 36, and species 8 as fig. 37. An example for this basis is species 4 and species 5 (fig. 4 and 5 respectively) where species 4 and 5 are not compatible and are mutually exclusive because species 5 has a feature of extracting a

Art Unit: 2623

feature amount (fig. 34 element 8) from the captured image while species 4 does not.

2. Applicant's election with traverse of the species restriction in Paper No. 6 filed on 01/13/03 is acknowledged. The traversal is on the ground(s) that the examiner has given no basis and proof on the distinctness of the different species in this application. This is not found persuasive because examiner has shown above, in the examiner's rebuttal, that different species exist in this application and that these species are mutually exclusive.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ekehard Steinbach, Alan Hanjalic, and Bernard Girod ("3D Motion and scene structure estimation with motion dependent distortion of measurement windows", Telecommunications Institute, University of Erlangen-Nuremberg, 1996) and Wixson (U.S. patent 6,303,920).

Regarding claims 1 and 9: Steinbach, Hanjalic, and Girod disclose an image recognition method comprising:

recognizing three-dimensional motion of an object in the range image by comparing the obtained image with a newly captured range image (Steinbach; pg. 62, figs 1 and 2., col. 2, col. 3, and col. 4, where two images are compared and 3D motion is recognized by the comparison of a reference image "obtained image" and a current image "a newly captured image").

Steinbach discloses a 3D motion recognition system by comparing two images. Steinbach does not disclose to obtain a deform image to use for 3D motion recognition. Wixson teaches to warp an image in order to recognize motion between frames of a moving object (Wixson; fig. 1 element 134, fig. 4 element 420, col. 1 lines 13-15 and 52-67, and col. 2 lines 55-60, where an image is warped" deformed in order to recognize motion). It would have been obvious to one skilled in the art to combine the teaching of Wixson to that of Steinbach because they are analogous in object motion recognition between two frames/images. One in the art would have been motivated to incorporate the teaching of Wixson to that of system of Steinbach in order to align the images (Wixson, col. 5 lines 14-16).

Regarding claim 27: It is rejected for the same reason as claim 1 and 9 above and for the following limitation of a computer usable medium (Wixson; fig. 6 element 600).

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Art Unit: 2623

Hanko et al. (U.S. patent 6,493,041) for recognizing motion between images.

Shin et al. (U.S. patent 5,642,166) for bi-directional motion detection.

Cipolla et al. (U.S. patent 5,581,276) for feature extraction to detect motion.

Tamio Arai and Kazunori Umeda ("Measurement of 3D motion parameters from Range images", Dept. of Precision Machinery Engineering, Faculty of Engineering, The University of Tokyo; Nov. 3-5, 1991).

Contact Information


5. Any inquiry into this communication should be directed to Anand Bhatnagar whose telephone number is 703-306-5914, whose supervisor is Amelia Au whose number is 703-308-6604, group receptionist is 703-305-4700, and group fax is 703-872-9314.

AB

Anand Bhatnagar

Art Unit 2623

March 27, 2003


AMELIA M. AU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600